REMARKS

I. INTRODUCTION

In response to the Office Action dated April 19, 2004, claims 1, 10 and 19 have been amended. Claims 1-27 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. TELEPHONE INTERVIEW SUMMARY

Record is made of a telephone interview between the below-signed attorney, Examiner Ke and SPE Kincaid that took place on July 8, 2004. The rejections, prior art and possible claim amendments were discussed during the interview.

III. PRIOR ART REJECTIONS

A. The Office Action Rejections

On page (2) of the Office Action, claims 1-7, 10-16, and 19-26 were rejected under 35 U.S.C. §102(e) as being anticipated by Hao et al., U.S. Patent No. 6,377,287 (Hao). On page (5) of the Office Action, claims 8, 17, and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hao in view of Schmeidler et al., U.S. Patent No. 6,374,402 (Schmeidler). Also on page (5) of the Office Action, claims 9, 18, and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hao in view of Berger et al., U.S. Patent No. 6,414,693 (Berger).

Applicant's attorney respectfully traverses these rejections.

B. The Applicant's Independent Claims

Independent claims 1, 10, and 19 are generally directed to synchronizing data between a graphical client and a server. Claim 1 is representative, and comprises the steps of:

(a) downloading one or more root object nodes of a scene from the server to the graphical client, wherein the scene is a collection of parameter values for rendering a model;

(b) intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes, wherein the view frustum comprises the part of the model between cutting planes defined by the scene; and

(c) downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client, wherein the graphical client renders the scene from the object nodes.

C. The Hao Reference

Hao describes a system and a method in accordance with an invention that utilizes hidden links, mapping and unmapping to enable single-screen visualization of hyperbolic space with multiple path links. In the preferred embodiment, the hyperbolic space is a display of a tree structure having nodes in which each child node has a single primary parent that is linked to the child node by a primary path. The nodes also include secondary paths. The system includes a multi-path processor that is used to manage three basic processing elements. As a first element, a multi-path property is added to each child node to indicate whether the child node has at least one secondary path in addition to its primary path. As a second element, an examiner checks each child node's multi-path property when a user focuses on that child node. If the node has at least one secondary path, the multi-path processor invokes the proper actions, such as mapping and unmapping. A third processing element is the mapper/unmapper which simultaneously maps and unmaps the secondary sub-tree nodes that are associated with the secondary path. Following the navigation of the secondary path, the multi-path processor reverses the operations, unmapping the sub-tree nodes and restoring the nodes to the original tree structure, simultaneously restoring the nodes.

D. The Schmeidler Reference

Schmeidler describes a system for secure delivery of on-demand content over broadband access networks includes a client application executing on a user's local computer system. The client application interacts with a content server on which a plurality of selectable titles are stored and further interacts with an access server which provides the network address of a title and keying data necessary for to the client process access and execute the title. The client process utilizes an installation abstraction which enables a title to be executed on the local computer system without ever being installed. The abstraction is achieved by mounting a network file system and storing a set of registry entries related to the title on the local computer system. Portions of the title are retrieved from the content server and executed by the local operating system. During title execution, requests from the local operating system are intercepted and redirected to the set of registry entries, as applicable. The times at which the client process may retrieve the title data from the content server are defined by the access server through use of an activator and token.

E. The Berger Reference

Berger describes a system and method for customizing articles on a computer-based display providing a supplier database and remote client computer. Data is transferred between the supplier and the client computer including predetermined images of client articles and accompanying images of custom graphics. The database stores information on a variety of clients. Each client is associated with one or more profiles, and each profile includes a series of images associated therewith. The client logs in under a given profile user name and password, and selects desired article images, and then calls up associated graphic images to manipulate onto the article images, creating a desired appearance. This appearance can be resubmitted to the supplier for production of an actual physical sample of the article.

F. The Applicant's Invention is Patentable Over the References

The Applicant's invention, as recited in independent claims 1, 10 and 19, is patentable over the references, because it contains limitations not taught by the references.

The Office Action cites Hao as disclosing the limitation of "downloading one or more root object nodes of a scene from the server to the graphical client" at col. 3, lines 10-28 and lines 42-56, which are set forth below:

> Col. 3 lines 10-28
>
> A "primary path" is defined herein as a tree link. Preferably, it is a directed non-cyclic graphic link in a hierarchical hyperbolic space. With the exception of a root node, each node has one primary parent, with the link from a node's primary parent to that node being the primary path. A "secondary path" is defined as a link in which additional (i.e., secondary) parents are defined. The link from a node's secondary parent to that node is a secondary path. A "hidden-link node" (as referred to as a "multi-path node") is defined as a node that contains both primary and secondary paths. "Primary sub-tree nodes" (also referred to as "primary sub-space nodes") are used herein to define the relationship between a sub-space parent node and its child nodes linked to the tree by a primary path. "Secondary sub-tree nodes" (also referred to as "secondary sub-space nodes") are used herein to define a relationship between a sub-space parent node and its child nodes linked to the tree by a secondary path.
>
> Col. 3, lines 42-56
>
> By operation of the multi-path processor, five different states are defined during navigation that includes a secondary path. In an idle state, the hyperbolic space with multi-path links has the same layout as it would have without the multi-paths. That is, the secondary paths are transparent to the user, so that there are no extra lines and intersections within the graph. An activate state is triggered by

identification of a multi-path node by a user. Preferably, the multi-path nodes are visually distinguishable from nodes which do not include secondary paths. When the user identifies a particular multi-path node, one or more temporary secondary path nodes will be drawn from that node. The user can dynamically select one of the secondary path nodes for further navigation.

The above descriptions in Hao do not teach or suggest the amended limitation, which comprises "downloading one or more root object nodes of a scene from the server to the graphical client, wherein the scene is a collection of parameter values for rendering a model." Indeed, Hao does not teach or suggest that the object nodes relate to a scene, or that object nodes are downloaded from a server to a graphical client, or that data must be synchronized between a graphical client and a server. Instead, the cited location in Hao merely relates to the display of a tree structure having nodes, but not the rendering of a scene from the nodes, and thus Hao merely identifies a hierarchy in a hyperbolic space.

The Office Action cites Hao as disclosing the limitation of "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes" at col. 3, lines 42-56, which is set forth below:

Col. 3, lines 42-56

By operation of the multi-path processor, five different states are defined during navigation that includes a secondary path. In an idle state, the hyperbolic space with multi-path links has the same layout as it would have without the multi-paths. That is, the secondary paths are transparent to the user, so that there are no extra lines and intersections within the graph. An activate state is triggered by identification of a multi-path node by a user. Preferably, the multi-path nodes are visually distinguishable from nodes which do not include secondary paths. When the user identifies a particular multi-path node, one or more temporary secondary path nodes will be drawn from that node. The user can dynamically select one of the secondary path nodes for further navigation.

The above description in Hao does not teach or suggest the amended limitation, which comprises "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes, wherein the view frustum is the part of the model between cutting planes defined by the scene." Indeed, Hao does not teach or suggest "bounding volumes," or "a view frustum," or "a set of visible and undefined object nodes," or "intersecting bounding volumes for the object nodes with a view frustum in the graphical client to determine a set of visible and undefined object nodes." Instead, the cited location in Hao merely describes a hyperbolic space with secondary paths that are transparent.

The Office Action cites Hao as disclosing the limitation of "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client" at col. 7, lines 35-51, which is set forth below:

> Col. 7 lines 35-51
> In the utilization of the above-identified invention, a Web browser with Java activator may be used to dynamically create a large hyperbolic space on the Web. The visualization Web interfaces are standard HTML and Java applets, which are used to explore relationships and to retrieve data within a region of interest. A server is integrated with a mining engine and a data warehouse that stores the information for the large hyperbolic space. The user is put in control at the client end of the Web-based, client-server model in order to mine the knowledge results. The process also allows the user to dynamically access large hierarchies with complex links through HTML pages in a Web browser. There are also other data mining applications with large hierarchical information structure that can be mapped into hyperbolic spaces with hidden secondary paths in accordance with the invention.

Hao does not teach or suggest the amended limitation, which comprises "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client, wherein the graphical client renders the scene from the object nodes." Indeed, Hao does not teach or suggest "a set of visible and undefined object nodes," or "downloading the object nodes in the set of visible and undefined object nodes from the server to the graphical client," or "the graphical client renders the scene from the object nodes." Instead, the cited location in Hao merely describes displaying a hyperbolic space in a web browser, wherein large hierarchies with complex links are dynamically accessed through HTML pages.

Finally, the Office Action asserts that Hoa discloses mapped and unmapped objects at col. 5, lines 7-28 (where mapped and unmapped objects are interpreted as being visible and undefined objects), which is set forth below:

> Col. 5, lines 7-28
> Referring now to FIG. 4, a system for providing dynamic hidden links is shown as having memory 66 that stores the hyperbolic space. The memory may be internal or external memory of a personal computer 68. In additional to conventional components, the computer 68 includes a multi-path processor 70, an examiner 72, a mapper 74 and an unmapper 76. The additional components enable techniques that provide multi-paths (i.e., both primary and secondary paths) in a hyperbolic space (both hierarchical and non-hierarchical) to be accessible and interactive. A user can easily navigate through all possible primary and secondary paths without drawing extra lines and intersections. This allows multiple paths defined in each node's property. For example, when a user clicks on a child node that has a secondary path (e.g., a link from an employee to both a regular manager and a temporary project

manager), the processing automatically maps and unmaps the secondary sub-tree nodes to the temporary manager for the uncomplicated navigation by the user. In FIG. 4, an example of a hyperbolic hierarchical space 78 is shown on the screen of a monitor 80.

The above descriptions in Hao do not teach or suggest mapped and unmapped objects as being visible and undefined objects, respectively. Instead, the cited location in Hao merely identifies a hierarchy in a hyperbolic space.

Schmeidler and Berger fail to overcome the deficiencies of Hao. Recall also that Schmeidler was cited only against dependent claims 8, 17 and 26 as teaching a stateless server, and Berger was cited only against dependent claims 9, 18 and 27 as teaching a client-side cache.

The references, taken individually or in combination, do not anticipate or render obvious Applicant's claimed invention. Moreover, the various elements of Applicant's claimed invention together provide operational advantages over the references. In addition, Applicant's invention solves problems not recognized by the references.

Thus, Applicant's attorney submits that independent claims 1, 10, and 19 are allowable over Hao, Schmeidler, and Berger. Further, dependent claims 2-9, 11-18, and 20-27 are submitted to be allowable over Hao, Schmeidler, and Berger in the same manner, because they are dependent on independent claims 1, 10, and 19, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-9, 11-18, and 20-27 recite additional novel elements not shown by Hao, Schmeidler, and Berger.

IV. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicant's undersigned attorney.

Respectfully submitted,

GATES & COOPER LLP
Attorneys for Applicant

Howard Hughes Center
6701 Center Drive West, Suite 1050
Los Angeles, California 90045
(310) 641-8797

By: _____
Name: George H. Gates
Reg. No.: 33,500

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